

RESEARCH AID

A SURVEY OF ECONOMIC PLANNING
IN THE USSR



CIA/RR RA-13
15 April 1957

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FOREWORD

This research aid discusses the function of over-all economic planning in the USSR, the structure of the National Economic Plan, and the most important Soviet planning techniques. The function of over-all economic planning and the most important planning techniques are emphasized. Inasmuch as a thorough survey of the constituent subplans of the National Economic Plan would require extensive treatment prohibited by the length of this research aid, only a brief report on each of the 13 subplans is included. The conclusion of this research aid assesses the efficacy of Soviet planning and the major methodological problems currently facing Soviet leaders.

A more extensive treatment of economic planning in the USSR is given in the following works:

Dobb, Maurice. Soviet Economic Development Since 1917,
London, 1948.

Granick, David. Industrial Management in the USSR,
New York, 1954.

An additional general work on the USSR which discusses economic planning in the USSR is Schwartz, Harry. Russia's Soviet Economy,
Second Edition, New York, 1954.

- iii -

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CONTENTS

	<u>Page</u>
I. Function and Characteristics of Soviet Economic Planning	1
II. Structure of the National Economic Plan	3
A. Aggregative Indexes of Activity	3
B. Production: Industry, Agriculture, and Transport	4
C. Material-Technical Supply (Distribution of Raw Materials, Semifinished Goods, and Capital Goods)	4
D. Capital Investment	5
E. Technology	5
F. Labor and Cadres	6
G. Cost of Production (Sebestoimost')	6
H. Retail Trade Turnover	7
I. Cultural Construction and the Communal Economy	7
J. Development of Regional and Local Economy	8
K. State Budget	8
L. Credit and Cash Plans of the State Bank	9
M. Foreign Trade	9
III. Planning Organization	9
IV. The Methodology of Planning: The Material-Technical Balance Technique, Cost Accounting, and Prices	11
A. Function and Structure of the Material-Technical Balance	11
B. Cost Accounting and Price Systems in the Soviet Economy	16
V. Efficacy of Present Planning System and Major Unsolved Problems	20

- v -

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Chart

Following Page

Reorganization of Soviet Planning Apparatus	10
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A SURVEY OF ECONOMIC PLANNING IN THE USSR

I. Function and Characteristics of Soviet Economic Planning.

Economic planning in the USSR is primarily a means, or methodology, for achieving the successive goals for the level of economic activity which are prescribed by the top Soviet leaders. Primarily for two reasons the Soviet leaders use a system of centralized planning in preference to a market mechanism as a means of allocating resources. First, to the Soviet leaders the market mechanism epitomizes the defects of capitalistic economy. They believe that the inadequacies of the market system as a means of resource allocation lead to depressions and unemployment. Maintaining that a socialist society operates according to economic laws which are inherent in the social process, the Soviet leaders conclude that these economic laws can be implemented only by a centrally planned distribution of resources according to the requirements of the user. Second, a market system of allocation with its implication of consumer sovereignty would not be suitable to a regime desirous of simultaneously maintaining rapid rates of economic growth and a strong military posture. The US found itself in such a position during World War II when it became necessary for the federal government to substitute direct allocation of vital materials and products for the customary methods of resource allocation. The Five Year Plans, which are in turn broken down into yearly plans and then into quarterly plans, state the general goals for levels of economic activity decided upon by the Soviet leaders and prescribe a pattern of resource allocation which will achieve these goals. The direct and detailed controls of resource allocation embodied in the yearly and quarterly Plans prohibit any large-scale use of resources for goals other than those of the Plans. In its final complex form the National Economic Plan delegates responsibility among the various ministries and their subordinate enterprises and firmly fixes the responsibility for meeting the over-all goals. This detailed delegation and fixing of responsibility makes the Plan the focus of most economic activity in the USSR.

The outstanding characteristic of economic planning in the USSR is centralization of decision making. While Stalin was alive, he personally made the major decisions on the level of economic activity.

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This authority is presently concentrated in the hands of the Party Presidium, probably in the hands of six senior members at most. The principal function of the central planning bodies, nominally subordinate to the Council of Ministers, is to provide the detailed schedules or resource flows which will achieve the major output goals set by the Party Presidium. Ultimately, the ostensible purpose of the economic objectives embodied in the plans is to reach the state of "Communism," the mythical materialistic Utopia in which every citizen will give according to his ability and receive according to his needs. In the meantime, however, the Soviet leaders have been faced with the necessity of industrializing a backward country and of surviving in a more or less hostile capitalist environment while simultaneously attempting to further the interests of world revolution by applying military force and, more recently, economic pressures, where expedient. Consequently, in any given Five Year Plan to date, consumption in effect has been treated as a cost of production to the state. Each Five Year Plan reflects the desire of the Soviet leaders to maximize production, minimize consumption, and thus maximize the resources which are available for investment and defense. The post-Stalin leaders believe that a slightly larger slice of investment resource must be allocated to consumer-oriented activities such as agriculture and housing if high rates of growth are to be maintained, but there is no indication that even Malenkov proposed to make the ordinary citizen's wants and desires the end objects of the Soviet economy.

The objectives of the leaders not only are given priority over the wants and desires of the ordinary citizens but also are themselves arranged in a strict hierarchy of priorities. A number of basic, so-called "leading link" industries -- coal, metallurgy, petroleum, electric power, a few key engineering industries, and defense production -- have consistently been given overriding priority (quantitatively and qualitatively) in the allocation of resources. Once the output goals for these basic industries have been decided and provision has been made for the necessary inputs, most of the available resources have been committed. The remainder of the economy receives what is left.

Extreme centralization of decision making necessarily requires detailed instructions to the subordinate units. Specific instructions and decisions concerning inputs into production, the efficiency of utilization of capital equipment, and so on, are sent down by the central authorities, and detailed statistical reports are sent in by

- 2 -

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the subordinate units. Recent extension of the authority of the individual ministries and of the union republics represents, on the one hand, an attempt to improve administrative efficiency and, on the other hand, the recognition that much of the detailed authority previously concentrated in the Council of Ministers and the central planning organs was seldom actually exercised. Although these changes do constitute significant modifications, they do not change the fundamental character of the system, inasmuch as the central authorities still make all the important decisions and reserve the right to reverse and change the minor decisions permitted the lower organs. The operation of the US military establishment remains the closest analogy to the Soviet system in US experience.

Finally, Soviet planning must simultaneously attract and channel the flow of human energy required to maintain rapid rates of growth. Centralized planning designed to promote maximum growth of heavy industry and the specific forms of social and economic organization required to support rapid growth and to satisfy the ideological proclivities of the leaders combine to produce acute social tensions which at the same time are necessary to the success of the plan. Regardless of individual desires, these social tensions compel all individuals in the Soviet society to conform and participate in the planned pattern. The only comparable mobilization of social activity in the US occurs during a period of hostilities.

II. Structure of the National Economic Plan.

The over-all economic plan is a complex structure involving approximately 13 major subplans. Each of these subplans has its own peculiar problems and structure, and each is interrelated with the others. These subplans are discussed briefly in this research aid to indicate their basic structure and place in the over-all system. Two of the most important subplans -- the plan for material-technical supply and the cost of production (sebestoimost') plan -- are given more detailed treatment in IV, below. These two components of the National Economic Plan were chosen for discussion because they provide the best contrast between the method and technique of resource allocation in the Soviet economy and a market economy such as that of the US.

A. Aggregative Indexes of Activity.

Among the aggregative indexes of activity are the monetary estimates of national income; the gross value of output for industry,

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agriculture, and transport; the volume of retail and foreign trade; the index of labor productivity; and the estimate of the value of capital investment. Inasmuch as these indexes represent the sum of only minimum approximations of the specific output and activity goals, they are called "estimated," or "accounting," goals.

B. Production: Industry, Agriculture, and Transport.

The production subplan consists of the output schedules for specific commodities in terms of physical units for specific time periods -- for example, 3 months, 1 year, and the 5th, or terminal, year. It is the most important part of the over-all plan. Each of the major output goals in physical units represents a specific decision of the Soviet leaders, and the primary function of all the other subplans, such as those for material-technical supply and capital investment, is to provide the wherewithal to meet the production goals. Thus the production plan for industry specifies the output of steel (including crude steel, rolled steel, structurals), coal and coke (also broken down by various types and grades), petroleum and petroleum products, machine tools (by type and model), turbines, trucks, tractors, military end items, and so on. The agricultural production plan specifies output goals for such commodities as grains, cotton, meat and dairy products, and potatoes and vegetables; it also includes the planned acreage and yields. The production goals for specific products in industry and agriculture and for services in transport serve as the point of departure for estimating the aggregate value of output in monetary terms. In contrast to the "estimated" value indexes, the production targets are known as "established" goals. Ministers, plant managers, and the like are promoted and rewarded or demoted and fired on the basis of their performance in meeting and exceeding the production goals in the specified commodity mix.

C. Material-Technical Supply (Distribution of Raw Materials, Semifinished Goods, and Capital Goods).

After the production goals are established and the responsibility for meeting them is delegated among individual producers, a schedule of allocations of resources is drawn up which in theory provides each producer with the precise amount of raw materials, semifinished goods, and capital equipment required to meet his production goals. These schedules are in terms of physical units and are constructed through the use of technological coefficients (input-output ratios). The material balance technique and the use of

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technological coefficients to allocate scarce resources among competing uses are among the features which most distinguish the planned economy of the USSR from capitalist economies (see IV, below).

D. Capital Investment.

The subplan for capital investment has two principal functions: (1) to provide the necessary increment to capital stock in order to meet future production goals and (2) to distribute the investment resources among various industries and activities in accordance with the priority preferences of the Soviet leaders. Thus heavy industry receives the largest share of total investment resources available in a given time period, and, within heavy industry, top-priority industries such as coal, ferrous and nonferrous metallurgy, petroleum, electric power, and those engineering industries which produce coal mining machinery, metallurgical equipment, machine tools, and military end items have first priority on the available investment resources. The overall level of investment, after due allowance for the military establishment, tends to leave resources barely sufficient to provide to labor the incentives necessary to achieve the production goals. In practice, investment has consistently accounted for at least 20 percent of national income.

Because of the complex nature of capital construction, the overall goal of the National Economic Plan is expressed in value terms but the most important inputs of capital equipment and construction materials are planned in terms of physical units. These inputs constitute a separate section of the subplan for allocation of raw materials, semi-finished goods, and capital equipment and are computed with the aid of technological coefficients. At the same time, the capital investment plan indicates specific goals in terms of physical units for additions to production capacity -- for example, area and volume of blast and electrical furnace capacity, electrical generating capacity, square meters of floor space, and inventory of machine tools and equipment.

E. Technology.

Since 1941 the introduction of new technological processes has been a separate subplan of the National Economic Plan. Technological innovations include a wide variety of measures such as the expanded production of cutting tools made from harder steels, the use of oxygen in steel production, and the replacement of steam locomotives with

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diesels. Inasmuch as new technology is inextricably linked with the most modern machinery and highly skilled manpower, the technology plan reflects the same hierarchy of priorities as the production and investment plans. Technological innovation currently has assumed increased importance in Soviet planning as a means of increasing labor productivity and of maintaining high capital-output ratios.

F. Labor and Cadres.

Increments to the nonagricultural labor force are scheduled in accordance with the over-all production goals and the planned average increase in the productivity of the existing labor force. Average output is expected to rise as a result, among other things, of the program for technical training which is included in the labor plan. The recent emphasis upon scientific and technical courses in the undergraduate schools reflects the contribution of technical training and education to the growth of labor productivity.

From 1928 to the present the Soviet leaders have been able to compensate for the chronic shortfalls in the growth of individual productivity by increasing the labor force more than planned. The actual increase in the nonagricultural labor force in each Five Year Plan usually has been considerably in excess of the increase originally planned. Because of demographic factors and the growing labor stringency in agriculture, this expedient will be available for the 1956-60 period only through further reductions in the armed forces. The necessary growth of labor productivity in the next 5 years will depend largely upon greater incentives more equitably distributed rather than upon harsh labor discipline and highly discriminatory distribution of limited incentives. The long reliance upon coercion, however, makes it very difficult for the Soviet planners to estimate precisely which incentives will produce the desired increase in labor productivity.

G. Cost of Production (Sebestoimost').

The relevant technological coefficients (input-output ratios in physical terms) and appropriate values (prices and wages) are applied to each production goal in order to compute unit cost of production (sebestoimost') estimates for the particular commodity and essential service produced. These estimates are then aggregated to provide an estimate of complete cost for the production of the plant or factory. The cost of production for all plants and products is aggregated by the top planning organs to provide a summary estimate of all production costs in industry, transport, and construction. The subplan for cost

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of production has two important functions. First, the cost of production of each individual commodity serves as a basis for calculating wholesale prices. The wholesale price represents cost of production plus a fixed rate of profit decreed by the central authorities (about 7 percent in heavy industry at the present time). Second, the cost of production plan provides an over-all measure of increased efficiency in the use of labor, capital, and materials in the productive process. Each year the cost of production of products produced in the preceding year is planned at a lower level in anticipation of increased labor productivity and increased efficiency in the use of other inputs. (The cost of production plan is discussed in IV, B, below.)

H. Retail Trade Turnover.

In order to absorb the cash income of the population -- chiefly from wages -- the state should provide consumer goods at prices which will just clear the market. This is frequently not done, however. Overpayment of the planned wage bill has created a chronic excess of money in the hands of the population since forced industrialization began in 1928, particularly before and during World War II. Since 1947, excessive reductions in retail prices have been the principal disruptive factors. Such an imbalance blunts the incentive measures designed to increase labor productivity. It is anticipated that the Soviet leaders will attempt to maintain a better balance between consumer purchasing power and consumer goods supplies during the 1956-60 period.

I. Cultural Construction and the Communal Economy.

The plan for cultural construction and the communal economy provides for the construction of schools, nurseries, theaters, that part of housing construction not carried out by the production ministries, and the general costs of urbanization: municipal water supplies, utilities, transport, and so on. With the exception of schools, most activities under this subplan have been granted low priority in the past, although housing construction has received growing attention since the death of Stalin. Furthermore, the over-all costs of urbanization probably will be relatively higher in the future as it becomes necessary to attract labor with more perquisites.

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J. Development of Regional and Local Economy.

Historically, the development of regional and local economies has been noteworthy for the low priority accorded it in practice as contrasted with the extensive discussion of regional planning by Soviet writers and Western observers. The emphasis on regional development of industry has varied greatly from one Five Year Plan to the next, and the much touted "regional self-sufficiency" of areas within the USSR is still largely mythical. Now that short-range planning has been separated from long-range planning and Gosplan is concentrating on 5- , 10- , and 15-year plans and on the development of the eastern regions, practice should begin to conform to theory. Because of a variety of pressures -- the lag in agricultural production that led to the new lands program, depletion of the richest and most accessible coal and iron ore deposits in the Ukraine and the Urals, discovery of rich new oilfields, the increasing burden on transport, and the lure of a vast potential for cheap hydroelectric power -- Siberia is about to undergo an industrial boom exceeding the original eastern expansion in the Urals and the Kuznets in the early thirties. Simultaneously, the post-Stalin leaders are encouraging local authorities to use local resources such as low-grade fuels, building materials, and industrial scrap to improve the lot of the consumer.*

K. State Budget.

The primary function of the state budget is to mobilize the financial resources of the economy and direct the flows in accordance with the production, investment, and military plans. The most important financial resource flows are, on the income side, the income from profits of enterprises and the turnover tax. These revenues constitute the "net income" of the state and account for most of the difference between consumption and production incomes created in the current time period. On the expenditure side, the principal items are the allocations to investment and defense. To the Soviet citizen and to the Western observer as well, the annual state budgets provide the best single indicator of economic policy.

* The type of regional organization envisaged by the decree of the Central Committee in February 1957 is designed primarily to combat certain institutional problems inherent in the functional ministerial structure. It also will enhance the trend toward greater regional self-sufficiency.

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L. Credit and Cash Plans of the State Bank.

The cash plan of the state bank consists primarily of estimates of cash flows and is designed to maintain a balance between such aggregate flows as wage payments and outlays for consumer goods and services. In addition, the state bank is the principal collector and disbursing of the incomes and outlays summarized in the state budget. The credit plan is the balance sheet of the state bank showing anticipated short-term loans for working capital on the asset side and deposits of enterprises and institutions on the debit side.

M. Foreign Trade.

Historically, foreign trade has accounted for a very small proportion of economic activity. Recently, however, a new era has opened. Intra-Bloc trade rapidly is becoming a significant factor in economic activity. Meanwhile, the European Satellites apparently may become an economic liability instead of an asset. In any event, the new policy of economic specialization and greater independence in the Satellites (in contrast to Stalin's policy of across-the-board expansion of heavy industry and economic subservience to the USSR) will promote the growth of intra-Bloc trade.

Inter-Bloc trade also has entered a new era. In the early years of industrialization, Soviet foreign trade with the West was primarily to acquire machinery, and later, to import certain key raw materials such as copper and rubber. Now that the USSR has more nearly eliminated the technological gap and achieved a volume of industrial production second only to that of the US, the Soviet leaders can afford to further their political objectives by a considerable volume of capital exports to underdeveloped nations outside the Bloc. The advantages accruing to the USSR from the raw materials imported in return, however, probably are coincidental.

III. Planning Organization.

Only one top-level planning organ was attached to the USSR Council of Ministers before 1948.* The Council of Ministers is dominated by the Presidium which in turn is run by the same men who constitute the Presidium of the Communist Party, so that the Planning Commissions are in effect staffs of the Party Presidium, or of Stalin personally before

* See the chart, following p. 10.

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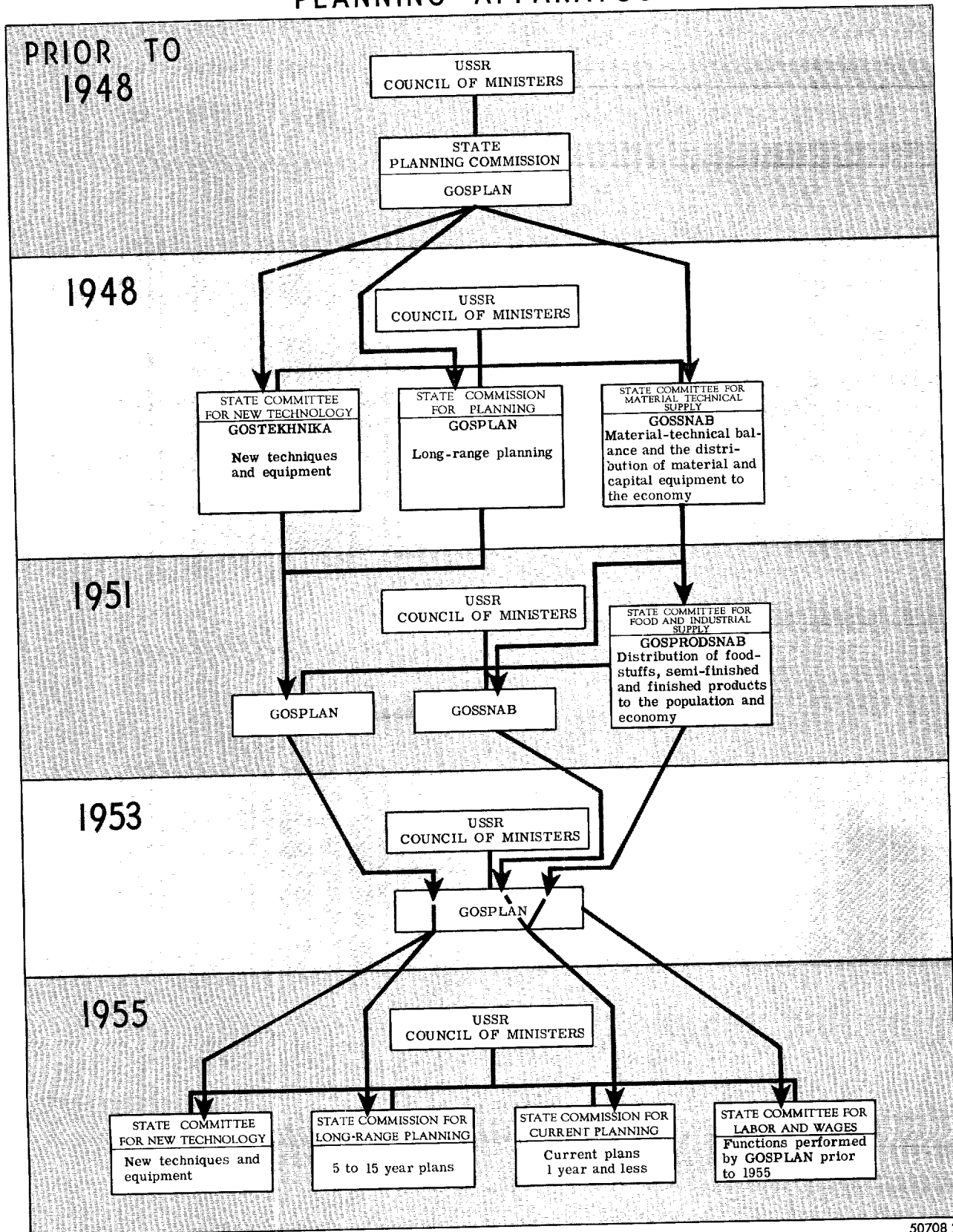
his death. The reorganization of 1948 was prompted primarily by two clearly defined circumstances: (1) the output goals of the Fourth Five Year Plan (1946-50) were not internally consistent and investment costs had been seriously underestimated, and (2) the system of direct allocation of the more important resources -- raw materials, semifinished goods, and capital equipment -- was working inefficiently. Individual enterprises were not receiving the supplies needed to fulfill production goals, and there was little control from the top over the efficiency of use of these resources. The State Committee for Material-Technical Supply (GOSSNAB) was set up to meet these problems by constructing more exact, detailed, and internally consistent 1-year plans which would insure closer approximation to the Five Year Plan goals; by relating the newly introduced (1947) subplan for allocation of material resources to the various producing ministries in accordance with production obligations; and by insuring more economical use of centrally allocated resources. In 1951, further specialization was introduced with the creation of the State Committee for Food and Industrial Supply (GOSPRODSNAB) to plan and allocate funded commodities such as cotton yarn which are allocated to consumer goods industries. It is this system of direct allocation of funded commodities and the associated material-technical balance technique which provides the methodology for reaching the successive goals set by the top leaders and which most distinguishes the Soviet economy from a normal, peacetime market economy.

In December 1956 the position and powers of the Commission for Short Range Planning were greatly strengthened when its former Chairman, Saburov, was replaced by a committee of Deputy Premiers of the Council of Ministers headed by Pervukhin. Pervukhin's committee brought with it the extensive, complementary powers of the Presidium of the Council of Ministers over current allocation of resources. The reorganization was primarily the result of serious lags in production of coal, cement, ferrous metals, and timber which represent an incipient threat to the production goals set forth in the Sixth Five Year Plan (1956-60) directives approved by the XXth Party Congress in February 1956. It is still not clear whether Pervukhin and his committee will be able to maintain the key 1960 goals intact.

- 10 -

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REORGANIZATION OF SOVIET PLANNING APPARATUS



11 JULY 1955

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IV. The Methodology of Planning: The Material-Technical Balance Technique, Cost Accounting, and Prices.

A. Function and Structure of the Material-Technical Balance.

Soviet leaders prefer a system of direct allocation of resources to a market system primarily because of ideological factors and the rapid rate of growth forced upon the economy. In order to achieve rapid over-all rates of growth, top priority is given to a very few industries -- the coal, petroleum, metallurgy, electric power, machinery, and defense industries. Thus the leaders strive not for some approximate level of national income in rubles but for specific rates of output of coal, petroleum, pig iron and steel, electric power, planes, ships, and so on. The only analogous condition in US experience is during wartime, particularly during World War II, when the efforts of the entire nation were directed toward producing the number of ships, guns, planes, tanks, and so on, which were estimated to be necessary to win the war, and when the US government set up a system of direct allocations for vital materials and equipment. Moreover, the Soviet leaders historically have placed top priority on increasing production, with cost considerations secondary. Consequently, the USSR has maintained in production inefficient plants and has built modern efficient plants beside them, so that the same product usually has many producers whose costs are far above the average. An allocation system which utilizes the Western price mechanism would not permit high-cost producers to remain in operation.

The policy of a strict hierarchy of priorities for heavy industry (and the disregard for the consumer) has one important consequence: the number of commodities and services over which the leaders must maintain strict control is limited. In other words, the planners do not have to solve all the simultaneous equations in the economy. Their task is limited to controlling the goods most essential to the key producers, relying on the delegation of responsibility and the system of rewards to insure that the ministerial officials and plant managers arrange the distribution and utilization of those goods and services which are not centrally allocated. The commodities whose distribution is centrally planned are known as "funded commodities," which means that the Council of Ministers itself defines the purposes for which they may be used and the quantity which may be used for any specific purpose. About the time of Stalin's death the list of "funded commodities" had grown to more than 1,600,

- 11 -

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but the number has subsequently been reduced by broadening the definitions and delegating more authority to the individual ministries. Fundamentally, however, the system remains the same.

The material-technical balance technique of planning, therefore, has three principal functions. First, the balance technique is intended to insure internal consistency (in Soviet terminology, "proportionality") between the various output goals by providing the means for resolving any inconsistencies that appear in the planning stage according to the priority preferences of the Soviet leaders. Second, the balance technique provides a basis for constructing a rational flow of funded commodities to the various producing ministries, and by the ministries to their subordinate plants, thus insuring that the producing units receive the minimum inputs, but no more, to meet their production obligations. Third, the technological coefficients used in constructing the balances are designed to promote economy in the use of the funded commodities allocated to the various producers. Thus the combination of direct allocation of funded commodities and the balances technique is the methodology employed to reach the successively higher levels of economic activity defined by the top Soviet leaders. In practice, the inevitable unforeseen inconsistencies and production failures which do arise are partially solved by resorting to contingency reserves.

The system of material balances, which is roughly analogous to a system of double entry bookkeeping, is constructed in the following manner*:

<u>Resources</u>	<u>Requirements</u>
Production (output of commodity x)	Production (inputs of commodity x to production of y and z)
Imports	Construction (capital investment; imports of commodity x to construction activity)
State reserves	Market fund (sale of commodity x to individual consumers)
Inventories (existing)	Exports (of commodity x)
	State reserves (gross additions to this centralized inventory under the Council of Ministers)
	Inventories (planned -- gross additions to enterprise inventories)

* It should be noted that the usual terms supply and demand are specifically avoided in favor of resources and requirements because

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Soviet long-range planners keep two fundamentals in mind: (1) every output is an input for some other commodity or commodities, and (2) planning is concerned only with funded commodities. If the production goals for commodity X are compared with the requirements of X needed to produce commodities Y and Z and it is found that the planned production of X is not sufficient to supply all the requirements, or, in Soviet terminology, a "disproportion" exists, then a number of alternative solutions are possible. The output goals for commodity X may be increased, or the requirements for Y and Z may be reduced -- in accordance with the priority preferences of the leaders -- by reducing the production goals for commodities Y and Z. Imbalances also may be alleviated by imports during a 5-year period (assuming exports can be maintained), but state reserves and inventories generally cannot furnish additional resources over a span of several years, inasmuch as they must grow in proportion to the growth of the economy as a whole.

For a Five Year Plan the function of the material balances is almost exclusively to insure internal consistency, or "proportionality," between the various goals. Five Year Plans have only a rudimentary subplan for direct allocation of resources. The technological coefficients used to equate the resources of commodity X to the requirements for its use in producing commodities Y and Z reflect rather general goals for increased economy in the use of resources. If the application of the material-technical balance technique to the 1-year plans is considered, it may be seen that the plan for direct allocation and the technological coefficients are worked out in greater detail and with much more precision. The State Commission for Current Planning is charged with drawing up the 1-year plans which will push the Soviet economy to the 5-year goals.

In the 1-year plans the subplan for allocation of funded commodities is drawn up in great detail and the technological coefficients are used to force increased efficiency out of the various producers. If commodity X is coal and the production goals for coal are to be made consistent with the requirements necessary to produce the planned amount of steel, electric power, and other coal-consuming commodities

the former have inseparable connotations of market-price mechanism and hence are unsuited to a description of the system of direct allocation used by the Soviet planners.

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and services, then the amount of coal necessary to produce the planned amount of steel is determined by multiplying the planned "norm" for coal expended in steel production by the planned output of steel. These planned "norms" (or technological coefficients) are known as average-progressive norms because they do not represent a simple arithmetic average of tons of coal expended per ton of steel in the past but, instead, the average coal expenditure for a selected group of the most efficient plants in the industry. The coal inputs required to generate the planned amount of electric power and all other funded commodities requiring coal in their production processes are similarly determined.

If the total of the requirements is assumed to exceed the planned production of coal, the range of solutions to the imbalance would allow for less far-reaching adjustments than in the Five Year Plan. Instead, the plan would usually require a series of compensating adjustments in the following year. Thus an imbalance between planned production and planned requirements for coal may be removed by increasing the coal production plan or by reducing the requirements by cutting back planned production of lower priority items. Actually, the latter is ultimately unavoidable as coal production can be increased only by additional resource allocations, but the planners can usually defer this consequence for a few months or even a year. On the other hand, in a 1-year plan the imbalance may be removed by depleting inventories which were larger than planned at the end of the previous time period. State Reserves may also be drawn upon, but again there is the almost inevitable penalty of rebuilding the reserves in the subsequent time period. Finally, imports may be increased. In any event, the complex process of adjustment and approximation continues until a "balance" is struck, and "proportionality" insured.

If the problem of balancing the production and requirements of an item of capital equipment is considered -- for example, machine tools -- the process is essentially the same, with the important exception of the norm (or technological coefficient). In estimating the allocation of new capital equipment, the Soviet planners use so-called "maximum norms" of capacity rather than the average-progressive norms used to estimate requirements of raw materials and semifinished goods. These maximum norms may be derived from an estimate by engineers of the maximum output possible with a given stock of capital equipment under ideal conditions or from the highest rates of output achieved by existing plants at peak periods. From the point of view of the planners, of course, the objective is the same for both the maximum and the average-progressive norms -- to put strong pressure for

- 14 -

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increased efficiency on each producer in each successive time period by allocating slightly fewer resources to produce an equivalent output.

In addition to the requirements for production and construction (capital investment) there are requirements for the market fund (consumer goods) to be sold to the population, the normal expansion of State Reserves and inventories plus replacement of past depletions if any, and exports. The market fund represents something of an anomaly in the system. Finished consumer goods, unlike goods allocated to state enterprises, are not rationed to each consumer in accordance with estimates by the central authorities of his needs. Finished consumer goods are simply offered for sale, and the consumer may buy or not as he pleases. If the population refuses to buy some product in the quantity and at the price offered, the state may reduce either the output of the commodity or the price. On the other hand, prices are seldom raised even if the demand far exceeds the supply at the price offered, and indeed political considerations have sometimes resulted in price cuts for commodities already in short supply. Most of the raw materials and semifinished goods allocated to consumption -- for example, cotton yarn, grain, flour, and leather -- however, are treated as funded commodities until final processing for sale in the market is completed.

Organizationally, the subplan for allocation of funded commodities is broken down by the Gosekonom (State Commission for Current Planning) only as far as the ministerial level. Each ministry then draws up a schedule of allocation encompassing its subordinate plants and can freely adjust the norms for any individual plant as long as the ministry as a whole remains within the prescribed limits. Continuous adjustments are necessary at every level -- the plant, the ministry, and the central planning bodies -- but the basic pattern is that decreed in advance by the central authorities. Thus the system of material-technical balances serves to secure internal consistency between the production goals desired by the leaders, to force constant improvement in efficiency, and to construct the schedule of resource allocations which will achieve the output goals.

The maintenance of large State Reserves (inventories of funded commodities which are under the direct control of the Council of Ministers) is an essential condition for effective operation of a direct allocation system under Soviet conditions. As the Soviet leaders are constantly pushing the economy to the limit and constantly

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pressuring the individual plants for greater efficiency, the individual plant's stock of raw materials and semifinished goods is kept at a minimum. Emergency and unforeseen contingencies such as failure to meet production goals for an essential item, a transportation tieup, malfunctioning of the supply apparatus, or erroneous planning, can all be met by releases from State Reserves which the plant pays back after the emergency has passed. State Reserves also contain certain strategic stockpiles for wartime use and may be used to facilitate political measures such as launching the consumer goods program after Stalin's death.

B. Cost Accounting and Price Systems in the Soviet Economy.

Whereas the system of direct allocation through the material balances, the norms, and distribution plan described above is the principal mechanism for resource allocation in the planned economy of the USSR, it does not follow that Soviet cost accounting and the various price systems possess neither function nor meaning. It may be noted that the term "price systems" is employed rather than the more common "price" or "prices." The reasons for this terminology provide a good introduction to the meaning and function of Soviet cost accounting categories and price systems. First, the prices of various kinds of goods vary widely in their structure and function. The final price of producer goods is the wholesale price, which differs somewhat in composition from the wholesale prices of consumer goods and differs radically in function from the final price of consumer goods -- the retail price to the consumer. The procurement (and contract) prices, which the state pays the collective farms for agricultural products, unlike the wholesale prices of producer and consumer goods, bear no relationship to the cost of production, which is indeed unknown for most agricultural products. Unlike the retail price of consumer goods, it has no allocational function. Foreign trade prices form another distinct price system. The only area in which prices are comparable to prices in a market economy is in the collective farm market, which only accounts for 10 to 12 percent of retail trade in the USSR.

The second distinctive characteristic of the various price systems in the Soviet economy is the absence of that automatic adjustment (omnipresent in a market economy) in the price of one commodity, and consequently of related commodities, in response to changes in relative scarcity. Thus an increase in demand for a consumer good usually will not result in a higher retail price, but more likely in

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longer queues rather than an increased supply. It almost never will result in any change in the price of the inputs into the production of the consumer good. A decrease in demand, on the other hand, occasionally will lead to a reduction in price and usually to a cutback in production. With the notable exception of collective farm market prices, virtually every price change is the result of a specific administrative decision, and the decision is seldom, if ever, automatic.

All of these caveats notwithstanding, the various cost and price systems do have meaning and do perform essential functions for the Soviet planners. The most important cost category is sebestoimost', which may be translated as "direct cost"* of production. Sebestoimost' serves as the measure of the major production costs, as the basis for determining the wholesale price for producer and consumer goods (the final price for the former), as an over-all index of increased economy in the use of all production factors from one time period to another, and as a means of putting pressure upon the producing enterprises to reduce costs. Although primarily a derivative of the plan for material-technical supply, the plan for sebestoimost' both in the aggregate and for individual commodities and services ranks with the supply, investment, and labor plans as the subplans most essential to achieve the production goals and to mobilize current savings for investment in the subsequent time period.**

There are five basic components to the sebestoimost' of industrial production: materials and semifinished goods, fuel and power, wage payments, amortization, and "other" (which is largely miscellaneous wage payments). The basic Soviet policy is to constantly reduce sebestoimost' for each commodity and in the aggregate for a comparable commodity mix and at the same time to reduce the share accounted for by wage payments. Thus sebestoimost' is reduced by economy in the use of material inputs, more technologically advanced capital equipment, and the growth of labor productivity. Economy in the use of material inputs is promoted primarily through yearly downward revision of the technological coefficients described above. Labor productivity is promoted through training, new technology, application of improved

* Sebestoimost' does not have an exact equivalent in Western accounting categories and, therefore, the Russian word is used.

** Sebestoimost' cost accounting is used in industry, transport, communications and, with variations, in construction, machine tractor stations, and trade. As has been noted previously, production cost accounting is virtually nonexistent for most agricultural products.

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management, and increased availability of consumer goods. The share of wage payments in total sebestoimost' is decreased by upward revision of the output "norms" for labor. Thus from 1949 to 1955, although aggregate sebestoimost' of industrial production was reduced approximately 34 percent, the share accounted for by wage payments declined from about 25 percent to about 23 percent of the total, despite the lack of a general revision of the norms and widespread abuse of the bonus system which resulted in chronic overpayment of the planned wage bill.

Reductions in sebestoimost' not only provide the measure of over-all economy in the use of resources, but also are a principal source (together with increases in volume of output) of increased profits for financing future investment and periodic price reductions. Thus in 1955-56 most of the increase in profits resulting from lower sebestoimost' and increased volume have been used to finance a reduction of about 10 percent in wholesale prices of producer goods.

Finally, the planned sebestoimost' for each individual industrial product provides the basis for calculating the wholesale price, which is determined by adding a rate of profit decreed by the state to the planned sebestoimost'. Although the rate of profit is generally uniform for producer goods, some significant variations are introduced so that the price structure resulting will serve to encourage production and substitution. Such manipulation of prices, however, generally is stable over periods of 3 to 5 years and has a very limited allocational function. Thus both the over-all rate of profit and the rates for specific commodities are fixed for base years such as 1952 and 1955 and are allowed to rise in the intervening years as sebestoimost' declines, only to be cut back again when a major price reduction is effected. And although the rate of profit in light industry, for example, is approximately three times that of heavy industry, light industry does not automatically compete with heavy industry for scarce resources. The day-to-day and month-to-month changes in relative scarcity and in order of priority are reflected in such administrative actions as granting or withholding of material resources (the funded commodities) through the plan of material-technical supply and by increasing or decreasing the production and investment plans. It must also be remembered that the sebestoimost'-profit formula chosen for an industry as a whole is one which insures a net profit to the industry, but not to every plant. Many

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plants and one entire industry -- timber -- operate at a loss.* Judging from Malenkov's statement of losses, net profit of industry in the 1951-55 period would have been about 20 to 25 percent greater if all unprofitable plants had been eliminated. Obviously the Soviet leaders are more interested in production than in profits.

In addition to these accounting and control functions, the wholesale prices of industrial products (sebestoimost' plus rate of profit) in a base year -- currently 1955 -- are used to plan and measure the growth of gross industrial production and investment for the next 5-year period. Identical or similar procedures are used to plan and measure the over-all growth of transport and communications and trade and are even applied to agriculture, although the result is virtually meaningless.

In summary, the wholesale prices of industry have meaning and function as accounting measures and controls which are indispensable to a reasonably efficient operation of the Soviet planned economy. Their allocational function, however, is extremely limited. The retail price of consumer goods (wholesale price plus turnover tax plus trade margin) does have a rationing function, but there is no automatic feedback affecting the supply of resources to consumer goods industries. Prices of transport and communications services are generally analogous to industrial wholesale prices with the important qualification that railroad rates are designed to discourage long hauls. Government prices paid for agricultural produce generally have no relationship to production costs (which are generally not known) and are merely units of account. The low level of agricultural procurement prices, even after the substantial increases of the recent years, however, provides a crude measure of the extent of forced saving in agriculture. Foreign trade prices form another entirely separate system. Only in collective farm market prices and to an increasing extent in wages are there price systems whose structure and function are more or less comparable to market prices.

It is likely that some significant modifications of the role of cost accounting and price systems in economic decision making have

* Losses as well as profits are planned; they do not always result from miscalculation of demand or of production costs. The entire system of input norms and sebestoimost' calculations is used both to minimize planned losses and to maximize planned profits.

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been made or are in the offing. The comparative costs of producing coal and petroleum, for example, seem to have played an important part in the recent decision to increase petroleum's share in the over-all fuel balance. Capital-output ratios may emerge as a really significant factor in decisions involving investment alternatives. There is a definite tendency to make planning somewhat more "economic" and less "administrative," as one Soviet economist put it. Although these modifications probably will not change the fundamental characteristics of the various price systems (with the exception of agricultural procurement prices), as outlined above, they will tend to reduce rather than increase the functional differences between the Soviet price systems and the operation of the price mechanism in a capitalist economy.

V. Efficacy of Present Planning System and Major Unsolved Problems.

The efficacy of the Soviet system of economic planning is attested to by one fact: in the course of 30 years the USSR has achieved a level of industrial output second only to that of the US. Given a relative abundance in natural resources and a disregard for human costs, it is a system well adapted to forced draft industrialization of a backward nation. If rapid industrial growth instead of consumer satisfaction is taken as the criterion of economic accomplishment, the Soviet system of direct allocation of resources in accordance with the priority preferences of the leaders compares favorably with the subtle and indirect market mechanism. The social costs of the Soviet system, however, have been enormous. The machine has been valued more than the worker, and all the amenities of life which are not essential to achieving the production goals have been removed or neglected. Indeed it can be argued that the first 5 to 10 years of industrialization on the Soviet model inevitably require no increase or even a decline in consumer real income with the calculated use of terror to insure social and economic discipline.

When Stalin died, the USSR was rapidly outgrowing its period of "primitive socialist accumulation." The supply of machines had been increased to the point where future growth began to depend more on efficient use of machinery rather than simply more of it, which in turn required that the worker be valued at least as much as the machine. Housing, more meat and dairy products in the diet, consumer durables, and other amenities of urbanization and industrialization demanded more consideration than in the past. Depletion of the more lucrative and easily accessible deposits of coal and iron ore

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and harnessing of the most advantageous hydroelectric power sites necessitated either much more efficient exploitation of remaining reserves or the working of equally lucrative but more distant virgin deposits, or both, if high rates of growth were to be maintained in the future.

Concomitant with the policy changes that have followed Stalin's death, there have been certain changes in planning organization, methodology, and attitude which are designed to continue the rapid tempo under changed conditions. The decision-making process at the center has been streamlined by grouping details into broader categories and by ceasing to decide as many minor questions as were attempted under Stalin's regime. Within the limits of over-all goals, the area of discretion with regard to implementation of the plans left to the judgment of the individual ministries, the plant managers, the governments of the various republics, and local authorities has been considerably broadened. Although the slight loosening of the bonds has engendered strong pressures to slow the rate of growth of the economy, the leaders thus far have been able to counter this tendency effectively and to keep the lower officials' wider discretion from encroaching upon the basic decision-making authority. On the other hand, the regime is benefiting from the greater initiative exercised at the lower levels.

Technological progress has become the principal means to increase labor productivity in current Soviet policy, at least until agricultural output can be substantially increased. The propagation of information on foreign technological developments has regained the attention it commanded before Zhdanov's preoccupation with Russian tradition became widespread in 1947-48. On the other hand, the drive for technological progress is hampered by the historic condemnation of technological obsolescence as one of the inherent wastes of capitalism and by the consequent refusal to allow for this factor in the accounting system. Soviet economists now admit that technological obsolescence exists in their system too, but so far they have not been able to evolve accounting techniques which will really encourage replacement of outdated equipment.

Prospects of solving the major planning problems in the nonagricultural sectors are somewhat better. If Soviet economists can overcome their Marxist bias against interest rates, more meaningful measures of choice between investment alternatives can be worked out and, if such measures (coefficients of effectiveness in Soviet terminology)

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are actually used in choosing between investment alternatives, the probability of maintaining the rate of growth will be strengthened. Increasing the rate of growth of labor productivity is more complicated. Historically, Soviet planners have paid little attention to the relative contribution of such factors as material incentives, technological change, and labor discipline to the growth of labor productivity. Although Soviet economists are presently devoting considerable attention to the problem, it will be difficult to come up with solutions which are practical in the light of existing institutional practices and preoccupation with a high rate of growth. The recent broadening of the plant managers' authority is conducive to greater efficiency, but the managers will not necessarily exercise their new rights in a manner wholly consistent with the unchanged over-all objectives and demands of the top leaders.

On balance, the Soviet planning system appears to be undergoing some of the adjustments and changes in attitude and method which are required if it is to continue to be an effective instrument for maintaining a rate of industrial growth comparable to that in the past. But, even allowing for great improvement in planning methods, the almost inevitable decline in the rate of growth of the industrial labor force in the next decade will make it extremely difficult to expand industrial production at the rate of 10 to 12 percent per year -- a rate of growth which Soviet economists believe can be maintained more or less indefinitely. Furthermore, owing to the political predilections of the top leaders agriculture probably will continue to be the weak link which could hamper the prospects for maintaining the present rate of industrial growth.

On the other hand, the Soviet economy has reached a state of development in capital goods production in which it probably is economically advantageous to export capital goods in return for agricultural and other raw materials. The economic gains of such trade, however, must be weighed against the political and economic consequences of dependence upon outside sources of supply in an emergency. Historically, the USSR has followed the principle of autarky, or economic self-sufficiency, and has developed a number of high-cost domestic raw materials industries. It is unlikely, therefore, that Soviet trade outside the Bloc will be determined in any major degree by the concept of "least cost." Political and military considerations will predominate, although some non-Bloc trading arrangements may have an immediate economic advantage to the USSR.

- 22 -

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The Soviet economic system requires firm leadership from the political leaders who are at the apex of the pyramid and who provide the principal impetus for the rapid growth. Prolonged indecision and internecine struggles at the top level, or inability to control and channel the social forces released by the relaxation of the past 4 years, not only might tend to slow economic growth to a rate below the level necessary to outstrip the West but also might result in radical changes in economic institutions. Finally, the removal of the most important coercive controls over labor and the at least temporary abandonment of mass terror will have as yet incalculable effects upon social discipline which may prove to be inconsistent with continuing high growth rates in the future.

- 23 -

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